UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,539	09/15/2003	John D. Curtis	LOT920030015US1	2273

23550	7590	03/17/2006

	EXAMINER
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ART UNIT	PAPER NUMBER
2188	

DATE MAILED: 03/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/662,539	CURTIS, JOHN D.
	Examiner	Art Unit	
	Jasmine Song	2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>28 December 2005</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-25</u> is/are pending in the application.

   4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-25</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>15 September 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

   Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

   Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

   * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

Detailed Action

1.   This office action is in response to Amendment filed on 12/28/2005. Claims 1,10

and 18 have been amended. Claims 1-25 are pending in the application. All rejections

and objections not explicitly repeated below are withdrawn.

Specification

2.   The lengthy specification has not been checked to the extent necessary to

determine the presence of all possible minor errors. Applicant's cooperation is

requested in correcting any errors of which applicant may become aware in the

specification.

Claim Rejections - 35 USC § 102

3.   The rejection of claims 1,4-10,14-18 and 22-25 under 35 U.S.C. 102(b) as being

anticipated by challenger., US Patent 6,266,742 B1 and the rejections of claims 2-3 and

11-13 and 19-21 under 35 U.S.C. 103(a) as being unpatentable over Challenger., US

Patent 6,266,742 B1, in view of Ims et al., US 6505200 B1 are maintained and updated

as shown below.

4.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5.   Claims 1,4-10,14-18 and 22-25 are rejected under 35 U.S.C. 102(b) as being anticipated by challenger., US Patent 6,266,742 B1.

Regarding claim 1, Challenger teaches that a method for caching data objects, comprising:

providing a cache having a cache log (according to the definition of cache log in the applicant's specification on page 5, section 0016, a cache log is taught as a LRU list 30 contains all cached objects or pointes to all cached objects and is ordered by the time at which the objects were last requested, col.4, lines 11-15) for the data objects (col.3, lines 47-48), wherein the cache log (it is taught as the LRU list) is adapted to log a history of requests for a data object (a history of requests for a data objection is taught as a history of requests for a cached object in the priority queue such as an object o1, col.4, lines 8-9,20-22) that is not stored in the cache (Fig.4, col.4, lines 42-47 and col.5, lines 50-55).

assigning discard rules to the data objects on a class basis (it is taught as assigning a metric m with low value to the data objects which are strong candidates for removal from the cache, col.4, lines 1-15);

predicting needed data objects based on the cache log (it is taught as predicting needed data objects based on past behavior which can be lest recently used data objects list or data objects with a high probability if being accessed; col.3, lines 8-12, col.4, lines 49-50);

prefetching the needed data objects into the cache (col.4, lines 45-50); and

discarding particular data objects from the cache based on the discard rules (col. 3, lines 20-22 and lines 10-11).

Regarding claim 4, Challenger teaches that the discarding step comprises discarding the particular data objects from the cache to a discard queue based on the cache rules (col.4, lines 20-22).

Regarding claim 5, Challenger teaches that further comprising:

receiving a request for certain data objects and retrieving the certain data objects from the cache (col.3, lines 47-52).

Regarding claim 6, Challenger teaches that the cache log comprises a relational database (col.3, lines 54-56).

Regarding claim 7, Challenger teaches that the needed data objects are predicted from a history of requests as tracked in the cache log (col.3, lines 57-60).

Regarding claim 8, Challenger teaches that further comprising dynamically adjusting the discard rules (col.4, lines 22-23).

Regarding claim 9, Challenger teaches that the predicting step comprises predicting a sequence of needed data objects (col.3, lines 1-2).

Regarding claims 10 and 18, Challenger teaches that a system for caching data

objects, comprising:

a logger for logging a history of requests for data objects in a cache log

(according to the definition of cache log in the applicant's specification on page 5,

section 0016, a cache log is taught as a LRU list 30 contains all cached objects or

pointes to all cached objects and is ordered by the time at which the objects were last

requested, col.4, lines 11-15) that is adapted to log the history of requests for a data

object (a history of requests for a data objection is taught as a history of requests for a

cached object in the priority queue such as an object o1, col.4, lines 8-9,20-22) that is

not stored in the cache (Fig.4, col.4, lines 42-47 and col.5, lines 50-55);

a predictor for analyzing the cache log and prefetching needed data objects into

a cache based on the history of requests (it is taught as predicting needed data objects

based on past behavior; col.3, lines 8-12 and col.4, lines 45-50); and

a request analyzer for discarding data objects from the cache based on discard

rules assigned to the data objects (col. 3, lines 20-22 and lines 10-11), wherein the

discard rules are assigned to the data objects on a class basis (it is taught as assigning

a metric m with low value to the data objects which are strong candidates for removal

from the cache, col.4, lines 1-15).

Regarding claims 14 and 22, Challenger teaches that the request analyzer

further dynamically updates the discard rules (col.4, lines 22-23).

Regarding claims 15 and 23, Challenger teaches that further comprising a request handler for receiving a request for a certain data object and retrieving the certain data object from the cache (col.3, lines 47-52).

Regarding claims 16 and 24, Challenger teaches that the cache log comprises a relational database (col.3, lines 54-56).

Regarding claims 17 and 25, Challenger teaches that the predictor predicts a sequence of needed data objects and prefetches the sequence of needed data objects into the cache (col.3, lines 1-2 and lines 50-52).

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 2-3 and 11-13 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Challenger., US Patent 6,266,742 B1, in view of Ims et al., US 6505200 B1.

Regarding claims 2-3, 12 and 20, Challenger teaches the claimed invention as shown above, Challenger does not teach refreshing the needed data objects from the refresh queue in the cache based on refresh rules. However, Ims teaches refreshing the needed data objects from the refresh queue in the cache based on refresh rules (col.5, lines 37-48 and col.14, lines 29-67 and col.13, lines 56-60).

It would have been obvious to the ordinary skill in the art at the time the invention was made to utilize the teachings of Ims into Challenger's data processing system such as refreshing the needed data objects from the refresh queue in the cache based on refresh rules because it will improve the overall system performance (col.14, lines 3-7).

According, one of ordinary skill in the art would have recognized this and concluded that they are from the same field of endeavor. This would have motivated one of ordinary skill in the art to implement the above combination for the advantages set forth above.

Regarding claims 11 and 19, Ims teaches that further comprising a governor for concurrently managing a refresh queue and a discard queue (it is taught as a system for concurrently managing a refresh queue and a updated queue; see claim 2).

Regarding claims 13 and 21, Challenger teaches that the discard queue contains data objects discarded from the cache by the request analyzer based on the discard rules (col.4, lines 20-22).

Response to Applicant's Arguments

8.   Applicant's arguments filed 12/28/2005 have been fully considered but they are

not persuasive.

        In response to applicant's argument that Challenger fails to teach that "the cache

log is adapted to log a history of requests for a data object that is not stored in the

cache" in the applicant's remarks page 6 filed on 12/28/2005, it is noted that this

limitation is taught as a cached data object such as o1 stored in the priority queue

(col.4, lines 8-9,20-22) is added to the cache (Fig.4, col.4, lines 42-47 and col.5, lines

50-55) and a pointer to o1 is added to the front of the LRU list. Since Challenger

teaches data object such as o1 is added to the cache, it means that data object o1 is

not stored in the cache.

        In response to applicant's argument that Challenger fails to teach that "predicting

needed data objects based on the cache log and prefetching the needed data objects

into the cache" in the applicant's remarks page 7 filed on 12/28/2005, it is noted that this

limitation is taught as predicting needed data objects based on past behavior which can

be lest recently used data objects list or data objects with a high probability if being

accessed; col.3, lines 8-12, col.4, lines 49-50 and prefetching the need data objects into

the cache (col.4, lines 45-50).

Conclusion

9.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

10.   When responding to the office action, Applicant is advised to clearly point out the

patentable novelty which he or she thinks the claims present in view of the state of the

art disclosed by the references cited or the objections made. He or she must also show

how the amendments avoid such references or objections. See 37 C.F.R. 1.111 (c).

11.   When responding to the office action, Applicants are advised to provide the

examiner with the line numbers and page numbers in the application and/or references

cited to assist examiner to locate the appropriate paragraphs.

12.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Jasmine Song whose telephone number is 571-272-

4213. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mano Padmanabhan can be reached on 571-272-4210. The fax phone

numbers for the organization where this application or proceeding is assigned are 571-

273-8300.

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-305-

3900.

Jasmine Song   Mano Padmanabhan

Patent Examiner   Supervisory Patent Examiner

March 9, 2006   Technology Center 2100

MANO PADMANABHAN
SUPERVISORY PATENT EXAMINER